



SEQUENCE LISTING

<110> Falco, Saverio
Allen, Stephen
Anderson, Shawn

<120> Genes Encoding Sulfate Assimilation Proteins

<130> BB-1167-B

<140> 09/720,384
<141> 2000-12-21

<150> 60/092,833
<151> 1998-07-14

<160> 14

<170> Microsoft Office 97

<210> 1
<211> 890
<212> DNA
<213> Zea mays

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agggtctgct gaaccagaag ggctgcgtcg tggatcac tggcctaagc gttcaggga 180
aaagcacgtc cgctgcgcg ctgagccgcg agtgcacgg cagaggccac ctcacgtacg 240
tcctcgacgg cgacaaccc aggacacggg tgaacaggga ctcaggttc ggagcagagg 300
accgcgcga gaacatccgc agagtagggg aagttagcgaa gctgttcgccc gacgctggcc 360
tcgtctgcat cgccagccct atatcgccct acagaagcga ccgaagcgcg tgcgcgatc 420
tgctgccccaa gcactcggtt atcgagggtgt tcctggacgt gccgcttcaa gtgtgcgaag 480
ccagggaccc caaaggccct tacaagctcg cacgcgcggg caaaaatcaaa ggttccaccg 540
gcatcgacga tccttacgaa ccgcgtcgg actgtgagat agtgcattt tgtaaagtgc 600
gcaactgccc ttgcctgaa tcgatggctg gtcacgttgt gtcgtaccc gagacgaatg 660
gtttctcca ggactagaca tggaatgcga tcgatgcgtc tgatgttat atatgttagca 720
gcagccggag cggcattgcc aaggctgtgt aatctcatgg ctgtcttct cttaagacc 780
aaaacaaca agagatggca gtgtaaaaaa gaaaaaaaaa actgcgtctg acagagtcgc 840
tgaatcaacc atgcttctga taaaaaaaaa aaaaaaaaaa aaaaaaaaaa 890

<210> 2
<211> 224
<212> PRT
<213> Zea mays

<400> 2
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1 5 10 15

Val Thr Ser Thr Val Gly Lys Ser Thr Asn Ile Leu Trp His Glu Cys
20 25 30

Ala Ile Gly Gln Lys Glu Arg Gln Gly Leu Leu Asn Gln Lys Gly Cys
35 40 45

Val Val Trp Ile Thr Gly Leu Ser Gly Ser Gly Lys Ser Thr Leu Ala
50 55 60

Cys Ala Leu Ser Arg Glu Leu His Gly Arg Gly His Leu Thr Tyr Val

*RECEIVED
MAY 03 2002
TECH CENTER 1600/2900*

65

70

75

80

Leu Asp Gly Asp Asn Leu Arg His Gly Leu Asn Arg Asp Leu Ser Phe
 85 90 95

Gly Ala Glu Asp Arg Ala Glu Asn Ile Arg Arg Val Gly Glu Val Ala
 100 105 110

Lys Leu Phe Ala Asp Ala Gly Leu Val Cys Ile Ala Ser Leu Ile Ser
 115 120 125

Pro Tyr Arg Ser Asp Arg Ser Ala Cys Arg Asp Leu Leu Pro Lys His
 130 135 140

Ser Phe Ile Glu Val Phe Leu Asp Val Pro Leu Gln Val Cys Glu Ala
 145 150 155 160

Arg Asp Pro Lys Gly Leu Tyr Lys Leu Ala Arg Ala Gly Lys Ile Lys
 165 170 175

Gly Phe Thr Gly Ile Asp Asp Pro Tyr Glu Pro Pro Ser Asp Cys Glu
 180 185 190

Ile Val Ile Gln Cys Lys Val Gly Asp Cys Pro Ser Pro Glu Ser Met
 195 200 205

Ala Gly His Val Val Ser Tyr Leu Glu Thr Asn Gly Phe Leu Gln Asp
 210 215 220

<210> 3

<211> 1217

<212> DNA

<213> Zea mays

<400> 3

gcgtccgtt	catttcatca	atcaaacaga	acctctggc	acacacacgc	agcaaccacc	60
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gacgcccacg	ctcgccgtca	tcctcgtaaa	tcoacagcgc	gcccctcccg	tcctcccgagg	180
cctcaccct	agcgatgcgc	cactccggc	gctcgtgatc	catggcctca	ctccccgttc	240
ctcacactct	tccgcgggtc	tgcgcagtga	tagtgggcgc	cgcgaggggg	agggcccgg	300
tgcgcgtacg	cactgccacc	gccccattgg	gcgtgtgggtg	cggccggccgc	ggcggaatgg	360
agcagcggccc	ggggaggccc	cgcacagccc	agtgaaggag	aagcctgtaa	tgtcgaacat	420
tgggaaatcg	actaatattt	tatggcacaa	ttgttgcatt	ggacaatctg	atagacagaa	480
attgtctggg	caaaaaggct	gtgtcgatg	gataacagga	ctcagtgggtt	cagggaaaag	540
tactcttgca	tgtgcactga	gtcgtgagtt	gcattgcaga	ggccacctca	cgtatgtact	600
tgatggtgac	aacctcagac	atggcctaaa	tagagattt	agctttaagg	cagaagaccg	660
tgcagaaaaat	atacgaagag	ttggtgaagt	ggcaaagctt	tttgcgtatg	ctgggtgtcat	720
atgcattgt	agcttgatat	ctccatatacg	gagagatcgt	gatgcgtgcc	gtgctctact	780
tccacattct	aactttattt	aagtatttat	tgatttgccc	ctaaaaattt	gtgaagctcg	840
tgatcctaaa	ggctataaca	agcttgcacg	tacaggaaag	attaaagggtt	tcactggaat	900
tgatgatcca	tacgaaccac	caattaatgg	tgagatagta	attaagatga	aagatgagga	960
atgccctca	cccaaagcaa	tggccaagca	agttctatgc	taccttgaag	aaaacggata	1020
tttgcggact	tagtatatgt	attttgagaa	gattgatctg	attcttgtt	gtccattact	1080
tgtggacaca	ataagatctg	ttgttggtca	catgaataaa	aggcatcaac	atgttaggaag	1140
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aaaaaaaaaa	aaaaaaaaaa					1217

<210> 4

<211> 343

<212> PRT

<213> Zea mays

<400> 4
Arg Pro Phe His Phe Ile Asn Gln Thr Glu Pro Leu Val Thr His Thr
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Gln Gln Pro Pro Ser Pro Ala Pro Gly Pro Ala Ser Gln Gly Gln Arg
20 25 30

Gln Gly Asn Thr Leu Leu Ser Pro Thr Pro Thr Leu Ala Val Ile Leu
35 40 45

Val Asn Pro Gln Arg Ala Pro Pro Val Leu Pro Gly Leu Thr Pro Ser
50 55 60

Asp Ala Pro Leu Pro Ala Leu Val Ile His Gly Leu Thr Pro Arg Ser
65 70 75 80

Ser His Ser Ser Ala Gly Leu Ala Ser Asp Ser Gly Arg Arg Glu Gly
85 90 95

Glu Gly Arg Gly Ala Arg Thr His Cys His Arg Gly Ile Gly Arg Trp
100 105 110

Val Arg Arg Arg Arg Asn Gly Ala Ala Pro Gly Glu Ala Pro His
115 120 125

Ser Pro Val Lys Glu Lys Pro Val Met Ser Asn Ile Gly Lys Ser Thr
130 135 140

Asn Ile Leu Trp His Asn Cys Leu Ile Gly Gln Ser Asp Arg Gln Lys
145 150 155 160

Leu Leu Gly Gln Lys Gly Cys Val Val Trp Ile Thr Gly Leu Ser Gly
165 170 175

Ser Gly Lys Ser Thr Leu Ala Cys Ala Leu Ser Arg Glu Leu His Cys
180 185 190

Arg Gly His Leu Thr Tyr Val Leu Asp Gly Asp Asn Leu Arg His Gly
195 200 205

Leu Asn Arg Asp Leu Ser Phe Lys Ala Glu Asp Arg Ala Glu Asn Ile
210 215 220

Arg Arg Val Gly Glu Val Ala Lys Leu Phe Ala Asp Ala Gly Val Ile
225 230 235 240

Cys Ile Ala Ser Leu Ile Ser Pro Tyr Arg Arg Asp Arg Asp Ala Cys
245 250 255

Arg Ala Leu Leu Pro His Ser Asn Phe Ile Glu Val Phe Ile Asp Leu
260 265 270

Pro Leu Lys Ile Cys Glu Ala Arg Asp Pro Lys Gly Leu Tyr Lys Leu
275 280 285

Ala Arg Thr Gly Lys Ile Lys Gly Phe Thr Gly Ile Asp Asp Pro Tyr
290 295 300

Glu Pro Pro Ile Asn Gly Glu Ile Val Ile Lys Met Lys Asp Glu Glu
305 310 315 320

Cys Pro Ser Pro Lys Ala Met Ala Lys Gln Val Leu Cys Tyr Leu Glu
325 330 335

Glu Asn Gly Tyr Leu Gln Ala
340

<210> 5
<211> 431
<212> DNA
<213> Oryza sativa

<220>
<221> unsure
<222> (48)
<223> n = A, C, G or T

<220>
<221> unsure
<222> (346)
<223> n = A, C, G or T

<220>
<221> unsure
<222> (431)
<223> n = A, C, G or T

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cttacacaga gatcaggtag aacagtggc gagaacaaag ttttgcattt gtcataatt 60
gtgccgaagg cgtccatatat cttctggcat gattgtcag ttggccaggc tgatcgccag 120
aagctactga agcagaaaagg ttgcgttgtt tggatcacag gacttagtgg ttcaaggtaaa 180
agtaccctgg catgcacatt agatcgagag ctccatacaa gagggaaagct ttcttatgtt 240
cttgcgttgtt ataatattaag acatggttt aacaaggatc ttggctttaa ggccgaaagac 300
cgtgcgtaaa atatacgc当地 agttggtgag gtagcaaagc tattcnccaga tgcaagccta 360
gtatgcattt caagtttcaa atctccctat aagagagaac gtgagtcctg gccctgcaat 420
attgtcaat n 431

<210> 6
<211> 118
<212> PRT
<213> Oryza sativa

<220>
<221> UNSURE
<222> (98)
<223> Xaa = ANY AMINO ACID

<400> 6
Ser Ile Val Pro Lys Ala Ser Asn Ile Phe Trp His Asp Cys Ala Val
1 5 10 15

Gly Gln Ala Asp Arg Gln Lys Leu Leu Lys Gln Lys Gly Cys Val Val
20 25 30

Trp Ile Thr Gly Leu Ser Gly Ser Gly Lys Ser Thr Leu Ala Cys Thr
35 40 45

Leu Asp Arg Glu Leu His Thr Arg Gly Lys Leu Ser Tyr Val Leu Asp
50 55 60

Gly Asp Asn Leu Arg His Gly Leu Asn Lys Asp Leu Gly Phe Lys Ala
65 70 75 80

Glu Asp Arg Ala Glu Asn Ile Arg Lys Val Gly Glu Val Ala Lys Leu
85 90 95

Phe Xaa Asp Ala Ser Leu Val Cys Ile Ala Ser Phe Lys Ser Pro Tyr
100 105 110

Lys Arg Glu Arg Glu Ser
115

<210> 7

<211> 936

<212> DNA

<213> Glycine max

<400> 7

gcacgagcca ccgcgaaggc tctgcgacag ccctgctacg ccggaatctt tcgcaacatc 60
gaatgcgcc cgtcgcccggc ggccggagtgcg ctagggtttc cgaagctccg cggaaatcaac 120
gtcaactggat tgcaactgcgg cccgcccggc ctgcgtccctcg tcctccgtgc aaaatcaaag 180
ccgatttaggg cgaaggagaa cgcaagcgta agtgcttctc tgatcgatga ctgggtcaag 240
ccaattacgg cgaaggagga ttctaaccga gaggaccgta catcttcgtt ttctggtaaa 300
aatctcaccc agatgtcaaa tggatggaaac tcgacaaaaca ttatgtggca tgactgtcca 360
attcagaaac aagatagaca gcagctgctt cagaacaacaag gctgtgttat atggctaact 420
ggcctcagcg gatcaggaaa aagcactatt gcatgtgctc tgagtcaaag cttgcactcc 480
aaaggaaaac tgtcttacat cttgtatggt gacaatattc ggcatggct aaaccaggat 540
cttagttta gagcagaaga tcgttctgaa aacatttagaa ggatttgtga ggtggcaaaa 600
ctctttgcag atgttgtgt tatggatcatc actagttaa tattcaccata cccaaaggat 660
agagatgcat gcagagcaact actttcaaaa ggagattttt ttgaggtttt catagatgtt 720
ccactacatg tgtgtgaagg tagggaccca aaggactt acaagcttgc tcgagctgga 780
aagatcaaag gtttcaactgg tatagatgtt ccatatgaac caccgtgttag ttgtgagata 840
gtattacaac agaaaggaag tgactgttaag tctccagtg atatggctga agaagtgata 900
tcctacttgg aggagaacgg atacctgcgg gcttga 936

<210> 8

<211> 311

<212> PRT

<213> Glycine max

<400> 8

Ala Arg Ala Thr Ala Lys Ala Leu Arg Gln Pro Cys Tyr Ala Gly Ile
1 5 10 15

Phe Arg Asn Ile Glu Cys Gly Pro Ser Pro Ala Ala Glu Ser Leu Gly
20 25 30

Phe Pro Lys Leu Arg Gly Ile Asn Val Thr Gly Leu His Cys Gly Arg
35 40 45

Arg Gly Leu Val Leu Val Leu Arg Ala Lys Ser Lys Pro Ile Arg Ala
50 55 60

Lys Glu Asn Ala Ser Val Ser Ala Ser Leu Ile Asp Asp Trp Phe Lys
65 70 75 80

Pro Ile Thr Ala Lys Glu Asp Ser Asn Ala Glu Asp Arg Thr Ser Ser
85 90 95

Phe Ser Gly Lys Asn Leu Thr Gln Met Ser Asn Val Gly Asn Ser Thr
100 105 110

Asn Ile Met Trp His Asp Cys Pro Ile Gln Lys Gln Asp Arg Gln Gln
 115 120 125
 Leu Leu Gln Gln Gln Gly Cys Val Ile Trp Leu Thr Gly Leu Ser Gly
 130 135 140
 Ser Gly Lys Ser Thr Ile Ala Cys Ala Leu Ser Gln Ser Leu His Ser
 145 150 155 160
 Lys Gly Lys Leu Ser Tyr Ile Leu Asp Gly Asp Asn Ile Arg His Gly
 165 170 175
 Leu Asn Gln Asp Leu Ser Phe Arg Ala Glu Asp Arg Ser Glu Asn Ile
 180 185 190
 Arg Arg Ile Gly Glu Val Ala Lys Leu Phe Ala Asp Ala Gly Val Ile
 195 200 205
 Cys Ile Thr Ser Leu Ile Ser Pro Tyr Gln Lys Asp Arg Asp Ala Cys
 210 215 220
 Arg Ala Leu Leu Ser Lys Gly Asp Phe Ile Glu Val Phe Ile Asp Val
 225 230 235 240
 Pro Leu His Val Cys Glu Ala Arg Asp Pro Lys Gly Leu Tyr Lys Leu
 245 250 255
 Ala Arg Ala Gly Lys Ile Lys Gly Phe Thr Gly Ile Asp Asp Pro Tyr
 260 265 270
 Glu Pro Pro Cys Ser Cys Glu Ile Val Leu Gln Gln Lys Gly Ser Asp
 275 280 285
 Cys Lys Ser Pro Ser Asp Met Ala Glu Glu Val Ile Ser Tyr Leu Glu
 290 295 300
 Glu Asn Gly Tyr Leu Arg Ala
 305 310

<210> 9
 <211> 928
 <212> DNA
 <213> Triticum aestivum

<400> 9
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 tggctgcgg gaagcagccc gtcaatggat cagccatggc aggtatcgac aagcttgtga 120
 cctcaactgt tggaaatcg acaaacgttc tttggcatga ctgtccaata ggtcagtttg 180
 agaggcagga actgctaaat cagaagggtt gtgttgtgtg gataacaggg ttaagtggtt 240
 cagggaaaag cacactagca tgcgcgctaa gtgcgcgagct gcactccaga ggtcatctga 300
 cctacattct agacgggtgac aatctaaggc atgggttaaa ccgagacctc ttttcgaag 360
 caaaggaccg tgctgaaaat atacgcagag taggagaagt agcaaagctg ttgcagatg 420
 ctggctgtat ctgcattgtct agcttgatata caccctacag aagtgaacgc agcgcttgcc 480
 gcaaattact gcacaattct acattcatcg aggtgttttt gaatgtccca ctgaaagttt 540
 gtgaagctag ggatccaaaa ggcttgtaca agcttgcggc tgccggaaaa atcaaagggt 600
 ttactggaat ttagtgcct tatgaagcac cttctgactg cgagatagt atacagtgc 660
 aagctggtga ctgcgccacg cctaaatcga tggctgtatca agttgtgtca tatcttgaag 720
 caaatgagtt cttacaggaa tagagacgta tgctatggat gaaaaaacat tctgaaattg 780
 gatcgccaag ggtatgtaaaa tatgaggtag tatttatgtc tagaaagagt gatgatagta 840
 tgagaacata tatattgaca taaagatcga atctgtacat cattataata aattgaaatg 900

ttttgacgca aaaaaaaaaaaa aaaaaaaaa

928

<210> 10

<211> 246

<212> PRT

<213> Triticum aestivum

<400> 10

Thr Arg Ala Asp Ala Gly Glu Arg Met Ala Gly Ser Glu Ala Val Pro

1

5

10

15

Val Val Ala Val Ala Ala Gly Lys Gln Pro Val Asn Gly Ser Ala Met
20 25 30

Ala Gly Ile Asp Lys Leu Val Thr Ser Thr Val Gly Lys Ser Thr Asn
35 40 45

Val Leu Trp His Asp Cys Pro Ile Gly Gln Phe Glu Arg Gln Glu Leu
50 55 60

Leu Asn Gln Lys Gly Cys Val Val Trp Ile Thr Gly Leu Ser Gly Ser
65 70 75 80

Gly Lys Ser Thr Leu Ala Cys Ala Leu Ser Arg Glu Leu His Ser Arg
85 90 95

Gly His Leu Thr Tyr Ile Leu Asp Gly Asp Asn Leu Arg His Gly Leu
100 105 110

Asn Arg Asp Leu Cys Phe Glu Ala Lys Asp Arg Ala Glu Asn Ile Arg
115 120 125

Arg Val Gly Glu Val Ala Lys Leu Phe Ala Asp Ala Gly Leu Ile Cys
130 135 140

Ile Ala Ser Leu Ile Ser Pro Tyr Arg Ser Glu Arg Ser Ala Cys Arg
145 150 155 160

Lys Leu Leu His Asn Ser Thr Phe Ile Glu Val Phe Leu Asn Val Pro
165 170 175

Leu Glu Val Cys Glu Ala Arg Asp Pro Lys Gly Leu Tyr Lys Leu Ala
180 185 190

Arg Ala Gly Lys Ile Lys Gly Phe Thr Gly Ile Asp Asp Pro Tyr Glu
195 200 205

Ala Pro Ser Asp Cys Glu Ile Val Ile Gln Cys Lys Ala Gly Asp Cys
210 215 220

Ala Thr Pro Lys Ser Met Ala Asp Gln Val Val Ser Tyr Leu Glu Ala
225 230 235 240

Asn Glu Phe Leu Gln Glu
245

<210> 11

<211> 521

<212> DNA

<213> Triticum aestivum

<400> 11
gcacgaggct tgcacgcaca ggaaagatta aagggttac acggagtttat gatccatacg 60
aatcaccagt gaatagttag atagtaatta agatggagg tggggatgc ctttcaccga 120
aggcaatggc ccagcaagtt ctgtcctacc ttgagaagaa cggatatttg caggcttagc 180
atatatatac tccagatcca gaagattgaa ctatttcttc tgtgtccata actcatggac 240
acaggcatga tccatttggt cgcatccgga ataaaaggcg ctgttattga agcaacaagc 300
tgccttttc acggggaaag ggacgcagat cgatgatcag tttgattgtt cggcattgct 360
cctctcgcc gtgttgtgct atttagctg tagtctatac ttgctcattt cgctgaaat 420
ggtgtgtgtgt gctgtgtgtgt gtttatttgg tggtaatgta tgatttgatt gtgggtgtca 480
aaagtaccaa tgaataaattc gtgcttcgtt tttcaaaaaa a 521

<210> 12
<211> 58
<212> PRT
<213> *Triticum aestivum*

<400> 12
Thr Arg Leu Ala Arg Thr Gly Lys Ile Lys Gly Phe Thr Gly Val Asp
1 5 10 : 15

Asp Pro Tyr Glu Ser Pro Val Asn Ser Glu Ile Val Ile Lys Met Glu
20 25 30

Gly Gly Glu Cys Pro Ser Pro Lys Ala Met Ala Gln Gln Val Leu Ser
35 40 45

Tyr Leu Glu Lys Asn Gly Tyr Leu Gln Ala
50 55

<210> 13
<211> 312
<212> PRT
<213> *Catharanthus roseus*

<400> 13
Met Ile Gly Ser Val Lys Arg Pro Val Val Ser Cys Val Leu Pro Glu
1 5 10 15

Phe Asp Phe Thr Glu Ser Thr Gly Leu Gly Lys Ser Ser Ser Val
20 25 30

Lys Leu Pro Val Asn Phe Gly Ala Phe Gly Ser Gly Gly Glu Val
35 40 45

Lys Leu Gly Phe Leu Ala Pro Ile Lys Ala Thr Glu Gly Ser Lys Thr
50 55 60

Ser Ser Phe Gln Val Asn Gly Lys Val Asp Asn Phe Arg His Leu Gln
65 70 75 80

Pro Ser Asp Cys Asn Ser Asn Ser Asp Ser Ser Leu Asn Asn Cys Asn
85 90 95

. Gly Phe Pro Gly Lys Lys Ile Leu Gln Thr Thr Val Gly Asn Ser
100 105 110

Thr Asn Ile Leu Trp His Lys Cys Ala Val Glu Lys Ser Glu Arg Gln
115 120 125

Glu Pro Leu Gln Gln Arg Gly Cys Val Ile Trp Ile Thr Gly Leu Ser
130 135 140

Gly Ser Gly Lys Ser Thr Leu Ala Cys Ala Leu Ser Arg Gly Leu His
145 150 155 160

Ala Lys Gly Lys Leu Thr Tyr Ile Leu Asp Gly Asp Asn Val Arg His
165 170 175

Gly Leu Asn Ser Asp Leu Ser Phe Lys Ala Glu Asp Arg Ala Glu Asn
180 185 190

Ile Arg Arg Ile Gly Glu Val Ala Lys Leu Phe Ala Asp Ala Gly Val
195 200 205

Ile Cys Ile Ala Ser Leu Ile Ser Pro Tyr Arg Lys Pro Pro Asp Ala
210 215 220

Cys Arg Ser Leu Leu Pro Glu Gly Asp Phe Ile Glu Val Phe Met Asp
225 230 235 240

Val Pro Leu Lys Val Cys Glu Ala Arg Asp Pro Lys Gly Leu Tyr Lys
245 250 255

Leu Ala Arg Ala Gly Lys Ile Lys Gly Phe Thr Gly Ile Asp Asp Pro
260 265 270

Tyr Glu Pro Pro Leu Lys Ser Glu Ile Val Leu His Gln Lys Leu Gly
275 280 285

Met Cys Asp Ser Pro Cys Asp Leu Ala Asp Ile Val Ile Ser Tyr Leu
290 295 300

Glu Glu Asn Gly Tyr Leu Lys Ala
305 310

<210> 14
<211> 276
<212> PRT
<213> Arabidopsis thaliana

<400> 14
Met Ile Ala Ala Gly Ala Lys Ser Leu Leu Gly Leu Ser Met Ala Ser
1 5 10 15

Pro Lys Gly Ile Phe Asp Ser Asn Ser Met Ser Asn Ser Arg Ser Val
20 25 30

Val Val Val Arg Ala Cys Val Ser Met Asp Gly Ser Gln Thr Leu Ser
35 40 45

His Asn Lys Asn Gly Ser Ile Pro Glu Val Lys Ser Ile Asn Gly His
50 55 60

Thr Gly Gln Lys Gln Gly Pro Leu Ser Thr Val Gly Asn Ser Thr Asn
65 70 75 80

Ile Lys Trp His Glu Cys Ser Val Glu Lys Val Asp Arg Gln Arg Leu
85 90 95

Leu Asp Gln Lys Gly Cys Val Ile Trp Val Thr Gly Leu Ser Gly Ser
100 105 110

Gly Lys Ser Thr Leu Ala Cys Ala Leu Asn Gln Met Leu Tyr Gln Lys
115 120 125

Gly Lys Leu Cys Tyr Ile Leu Asp Gly Asp Asn Val Arg His Gly Leu
130 135 140

Asn Arg Asp Leu Ser Phe Lys Ala Glu Asp Arg Ala Glu Asn Ile Arg
145 150 155 160

Arg Val Gly Glu Val Ala Lys Leu Phe Ala Asp Ala Gly Ile Ile Cys
165 170 175

Ile Ala Ser Leu Ile Ser Pro Tyr Arg Thr Asp Arg Asp Ala Cys Arg
180 185 190

Ser Leu Leu Pro Glu Gly Asp Phe Val Glu Val Phe Met Asp Val Pro
195 200 205

Leu Ser Val Cys Glu Ala Arg Asp Pro Lys Gly Leu Tyr Lys Leu Ala
210 215 220

Arg Ala Gly Lys Ile Lys Gly Phe Thr Gly Ile Asp Asp Pro Tyr Glu
225 230 235 240

Pro Pro Leu Asn Cys Glu Ile Ser Leu Gly Arg Glu Gly Gly Thr Ser
245 250 255

Pro Ile Glu Met Ala Glu Lys Val Val Gly Tyr Leu Asp Asn Lys Gly
260 265 270

Tyr Leu Gln Ala
275